The Collembola of New Mexico. X. Entomobryinae: Drepanocyrtus, Willowsia, Lepidocyrtus, Pseudosinella [1, 2]

Harold George Scott [3]

Specimens will be deposited with the Academy of Natural Sciences, Philadelphia, Pennsylvania.

Genus **DREPANOCYRTUS** Handschin, 1925

Body elongate, not subglobose; scales present; eyes 8 and 8, on dark eyepatches; antenna 4-segmented, distal segments never annulate; prothorax naked, greatly reduced; Abd IV more than $2\frac{1}{2}$ times length of III; dentes crenulate dorsally, with scales ventrally; mucronal teeth absent; mucronal spines absent.

Key to Species of Nearctic Drepanocyrtus

1. Th II—Abd III with dark purple markings..... .....**mexicanus** (Folsom, 1898)
   Th II—Abd III white.....**reinhardi** Mills, 1931

Note: *D. terrestris* Folsom, 1932, from Hawaii seems to be *D. reinhardi*. *D. dowlingi* Wray, 1953, is recorded from Puerto Rico.

Drepanocyrtus mexicanus (Folsom, 1898), new combination
Seira mexicana Folsom, 1898
Lepidocyrtus mexicanus Handschin, 1928

Discussion. *D. mexicanus* showed the strictest habitat specificity of any species in the New Mexico study. Folsom (1898) reported it from grasses and "upon old cocoons on *Salix Humboldtiana*."

[1] A portion of a dissertation submitted to the Graduate Faculty of the University of New Mexico, Albuquerque, in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

[2] Part IX, Ent. News, 74 (1): 9–18.

[3] Training Branch, Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta 22, Georgia.

New Mexico Records. Ten collections, all from beneath tight bark of yellow pine logs; 6,500 to 9,200 ft; San Miguel, Valencia, Torrance, Catron, and Lincoln Co.; June to Aug., 1951–1952.

Distribution. Calif., N. M.; Mexico, D. F. and State of Mexico (Mexico).

Genus **Willowsia** Shoebotham, 1917

(= **Sira** Lubbock, 1870)

Body elongate, not subglobose; scales present; antenna 4-segmented, never annulate; eyes 8 and 8, on dark eyepatches; Abd IV more than 2½ times length of III; dentes dorsally crenulate; mucro with 1 tooth and 1 basal spine.

Key to Species of United States Willowsia

(including Alaska, Hawaii and Puerto Rico)

1. Blue to violet..... **buski** (Lubbock, 1869)
   Yellow to gray with blue markings.. **platani** (Nicolet, 1841)

Willowsia buski (Lubbock, 1869)

New Mexico Records. From Berlese sample of woody debris of hollow tree root, yellow pine-fir community, 7,500 ft, San Miguel Co., 6–vii–1953.

Distribution. Calif., Colo., Conn., Fla., Ill., Iowa, Maine, Md., Mass., Minn., N. M., N. Y., Penna., Utah, Vt., Wash.; Alberta and Ontario (Canada); Iceland; Europe.

Willowsia platani (Nicolet, 1841)

New Mexico Records. With ants from nest beneath dung, grassland 8,500 ft, Colfax Co., 14–vii–1953; Berlese sample of oak litter, 7,800 ft, McKinley Co., 7–ix–1951; bathtub in house, 5,000 ft, Bernalillo Co., 21–vi–1950.

Note. Many collections of this species have been from human habitations (Scott, et al., 1962). It was reported infesting decayed insulation of a refrigeration plant (Sanders, 1940).

Distribution. Calif., Conn., Fla., Idaho, Ill., Iowa, Kansas, La., Mass., Maine, Minn., N. M., N. Y., Texas, Utah; Labrador and Ontario (Canada); Europe, Australasia.

Genus **LEPIDOCYRTUS** Bourlet, 1839

Body elongate, not subglobose; scales present; antenna 4-segmented, not annulate; eyes 8 and 8, on dark eyepatches; Abd IV usually more than 2½ times length of III; dentes crenulate dorsally, scaled ventrally; mucro with 1 tooth and 1 basal spine.

NOTE. The name *Lepidocyrtus* is stabilized by the International Commission on Zoological Nomenclature, Opinion 291 (Name 720), signed 3 March 1954, published 12 October 1954.

KEY TO SPECIES OF UNITED STATES LEPIDOCYRTUS
(Including Alaska, Hawaii and Puerto Rico)

1. Body with some dark markings....2
   Body entirely white (eyespot may be dark)....13
2. Abd IV less than twice length of III.... ....**inornatus** Folsom, 1932
   Abd IV 3–6 times length of III....3
   Abd IV 10–12 times length of III....11
3. Th II projecting strongly over head....4
   Th II not projecting over head or only slightly....6
4. Abd IV about 4 times length of III.... ....**christianseni** Goto, 1953
   Abd IV about 6 times length of III....5
5. Abd IV with mid-dorsal purple band.... ....**unifasciatus** James, 1933
   Abd III or III–IV with lateral purple spots.... ....**finensis** Maynard, 1951
6. White, with or without limited blue to purple markings...7
   Yellow, with orange, red, blue or purple markings....8
   Violet....9
   Deep purple, blue, or gray....10
7. Abd IV 4.5 times length of III.....**usistatus** Folsom, 1927
   Abd IV about 6 times length of III.... ....**curvicollis** Bourlet, 1839
8. With orange to red flecks.....**aurantiacus** Maynard, 1951
   With scant purple markings....**nigrosetosus** Folsom, 1927
   With purple band of Th II–III + Abd I–III.... ....**beaucatcheri** Wray, 1946
9. Abd IV about 5 times length of III.... ....**violaceus** (Geoffroy, 1762)
   Abd IV 3–4 times length of III..**pusillus** (Linnaeus, 1767)

10. Head yellow.....**guthriei** Maynard, 1951
Head not yellow.....**cyaneus** Tullberg, 1871
11. Blue-black to black.....**alleganyensis** Maynard, 1951
White with blue to purple markings.....12
12. Abd IV with mid-dorsal purple band.....
.....**summersi** (MacGillivray, 1894)
Abd IV without purple markings.....
.....**lanuginosus** (Gmelin, 1767)
13. Th II projecting strongly over head.....
.....**heterophthalmus** Carpenter 1904
Th II not projecting strongly over head.....14
14. Abd IV about 6 times length of III.....
.....**curvicollis** Bourlet, 1839
Abd IV about 3–4 times length of III.....15
15. Tenent hair knobbed.....**immaculata** Folsom, 1932
Tenent hair unknobbed.....
.....**candida** (Folsom, 1902), new combination
(= **Pseudosinella candida**)

NOTE. Not included in key is *L. caprilesi* Wray, 1953, from Puerto Rico.

Lepidocyrtus curvicollis Bourlet, 1839

NEW MEXICO RECORDS. From Berlese sample of oak litter, 7,000 ft, Bernalillo Co., 30–iii–1952.

DISTRIBUTION. Calif., Conn., Ill., Iowa, Maine, Mass., N. M., N. Y., Pa., Ontario (Canada), Europe, Africa.

Lepidocyrtus cyaneus Tullberg, 1871

NEW MEXICO RECORDS. Once with ants beneath dung, and 8 Berlese samples (1 alder-fir litter, 1 fir litter, 1 fir log, 4 cottonwood litter, 1 cottonwood log); 4,100 to 8,500 ft; Bernalillo, Colfax, Dona Ana, Sandoval, Socorro, and Taos Co., May–Nov., 1949–1954.

DISTRIBUTION. Alaska, Calif., Conn., Hawaii, Idaho, Ill., Iowa, Kansas, La., Maine, Md., Mass., Minn., N. M., N. Y., N. C., Ohio, Tenn., Texas, Utah, Wash.; Northwest Territories and Ontario (Canada); State of Mexico (Mexico); Greenland, Europe, Asia, Africa, Australasia.

Lepidocyrtus guthriei Maynard, 1951

NEW MEXICO RECORDS. From beneath bark, yellow pine log, 8,200 ft, Torrance Co., 3–vii–1953; Berlese sample, yellow pine-

fir litter, 7,500 ft, San Miguel Co., 6–vii–1953.
DISTRIBUTION. Minn., N. M., N. Y.

Genus **PSEUDOSINELLA** Schaffer, 1897

Body elongate, not subglobose; scales present; eyes absent or as many as 8 on each side; distal antennal segments never annulate; Abd IV more than 2½ times length of III; dentes crenulate dorsally, scaled ventrally; mucro with 1 tooth and 1 basal spine.

KEY TO SPECIES OF UNITED STATES PSEUDOSINELLA
(including Alaska, Hawaii, and Puerto Rico)

1. Eyes 6 × 6 2
   Eyes 5 × 5 3
   Eyes 4 × 4 5
   Eyes 3 × 3 ..... **sexoculata** Schott, 1902
   Eyes 2 × 2 6
   Eyes 1 × 1 ..... **hirsuta** (Deboutteville, 1949)
   Eyes absent 8
2. Unguis with 2 inner teeth ..... **collina** Wray, 1952
   Unguis with 3 inner teeth .. **duodecimpunctata** Denis, 1931
3. Inner teeth of unguis subequal 4
   Inner teeth of unguis unequal ..... **duodecimpunctata** Denis, 1931
4. Eyepatch ovid ..... **decemoculata** (Guthrie, 1903)
   Eyepatch rectangular ..... **dubia** Christiansen, 1960
5. Abd IV about 5 times length of III ..... **dubia** Christiansen, 1960
   Abd IV about 3 times length of III ..... **octopunctata** Borner, 1901
6. Abd IV about 6 times length of III ..... **hirsuta** (Deboutteville, 1949)
   Abd IV about 4 times length of III 7
7. Inner teeth of unguis small ..... **gisini** Christiansen, 1960
   At least some inner teeth of unguis large ..... **alba** (Packard, 1873)
8. Abd IV 6–7 times length of III 9
   Abd IV 2.5–4 times length of III 11
9. Dens with spines ..... **spinosa** (Deboutteville, 1949)
   Dens without spines 10
10. Ant IV more than 2 times length of I + II + III ..... **boneti** Christiansen 1960

Ant IV less than 2 times length of I + II + III.....
.....**hirsuta** (Deboutteville, 1949)
11. Abd IV about 4 times length of III..**argentea** Folsom, 1902
Abd IV about 3.5 times length of III.....
.....**petterseni** Borner, 1901
Abd IV about 3 times length of III.....12
Abd IV about 2.5 times length of III.....
.....**violenta** (Folsom, 1924)
12. Basal mucronal spine present.....13
Basal mucronal spine absent.....**espana** Christiansen, 1960
13. Unguiculus with large outer tooth.....**folsomi** Denis, 1931
Unguiculus with small outer tooth or none.....14
14. Tenent hair capitate.....**rolfsi** Mills, 1932
Tenent hair acuminate.....**orba** Christiansen, 1960

NOTE. Not included in the key is *P. subfusca* Wray, 1953.

Pseudosinella decemoculata (Guthrie, 1903)

NEW MEXICO RECORDS. From Berlese samples of dry yellow pine litter; 8,400 ft, Sandoval Co.; 25–viii–1953; and yellow pine-fir litter; 7,500 ft, San Miguel Co.; 6–vii–1953.
DISTRIBUTION. Minn., N. M., N. Y., Wash.

Pseudosinella petterseni Borner, 1901

NEW MEXICO RECORDS. Once under rocks, 4 times with ants, and 3 Berlese samples (oak, limber pine, cottonwood stump); 6,600 to 10,300 ft; Bernalillo, Dona Ana, Mora, Socorro, and Valencia Co., May–Nov., 1949–1954.
DISTRIBUTION. Ark., Calif., Conn., Ill., Ind., Iowa, La., Mass., Minn., Mo., N. M., N. Y., N. C., Tenn., Texas, Utah, Wash.; Ontario (Canada); South America, Europe, Asia.

NOTE. This species was recorded from New Mexico by Christiansen, 1960.

SUMMARY

Eight species of Entomobryinae (1 *Drepanocyrtus*, 2 *Willowsia*, 3 *Lepidocyrtus*, 2 *Pseudosinella*) are recorded from New Mexico. Of these, only *P. petterseni* has been reported previously from the state. Keys are presented to United States species of all 4 genera.

References Cited

Christiansen, K. 1960. Psyche 67: 1–25.
Folsom, J. W. 1898. Psyche 8: 183–184 + 2 plates.
Sanders, G. 1940. Pests 8: 20.
Scott, H. G., Wiseman, J. S., and Stojanovich, C. J. 1962. Ann. Ent. Soc. America 55: 428–430.

Review

Guide to the Insects of Connecticut. Part VI. The Diptera or True Flies of Connecticut. Eighth Fascicle. Scatopsidae and Hyperoscelidae by **Edwin F. Cook,** Blepharoceridae and Deuterophlebiidae by **Charles P. Alexander,** Dixidae by **Wesley R. Nowell.** Pp. vi + 115, illus. Published by State Geological and Natural History Survey of Connecticut, Bull. No. 93, 1963. Distribution and exchange agent, Robert C. Sale, State Librarian, State Library, Hartford, Conn.

The treatment in each group is very broad and includes a general introduction, morphology of adult and immature stages, an account of the biology, and techniques for collection and study. Keys are provided for the subfamilies of the world, genera of North America, and species of the Northeastern region (Virginia to Labrador, westward to the Great Plains). Selected bibliographies are given and there is a foreword by the Entomological Editor for the Survey, Dr. Charles L. Remington, of Yale University.